

**REMARKS**

Claims 1-20 and 26-27 are pending herein. Claims 21-25 have been cancelled without prejudice or disclaimer.

Claims 1, 8, 19 and 27 have been appropriately amended with regard to the informalities pointed by the Examiner, and to overcome the rejection of Claims 1, 8, 20 and 22 under 35 U.S.C. 112. Therefore, it is respectfully requested that the associated objection and rejection be withdrawn.

Claim 1-8 and 10-20 were rejected under 35 U.S.C. 102(b) over Sangeetha et al. (Science Des Ailments, 2002).

It is submitted that Sangeetha et al. only attempt to study the effect of reaction conditions on FOS production, without studying the effect of chosen variables on the functional properties of FOS. The present invention is directed to an improvement of functional property of FOS, specifically to be used as a health ingredient in food products. It is noted that in order to be acceptable, FOS must have desirable properties like sweetness and cariogenicity. Moreover, Sangeetha et al. use sucrose as a sole source of carbon, whereas, the present invention uses jaggery in addition to sucrose. Therefore, it is submitted that Claims 1-8 and 10-20 are not anticipated by Sangeetha et al.

Claim 10 was rejected under 35 U.S.C. 103(a) over Sangeetha et al. and Vijayendra et al. (Proc. Biochem. 2001).

As mentioned above, Sangeetha et al. do not describe the use of jaggery as a carbon source for FTase production, or as a suitable substrate for FTase for FOS production. The Examiner states that the work of Sangeetha et al. teaches the use of the strain *Aureobasidium pullulans* for FTase production. However, the present invention is directed to the use of *Aspergillus oryzae* and *Aspergillus pullulans*.

The Examiner further points out that Vijayendra et al. describe jaggery as a substitute for sucrose in *Aureobasidium pullulans* fermentation. However, the cited reference is directed to production of pullulan, which is materially different from the product of interest described in the present application, i.e., FOS. Moreover, Vijayendra et al. do not in any way prompt an ordinary skilled artisan to select *Aspergillus oryzae* and/or *Aspergillus pullulans* for production of FOS. Additionally, they do not teach or suggest using jaggery for fermentations involving *Aspergillus oryzae* and/or *Aspergillus pullulans* for FOS production. Although Sangeetha et al. teach using *Aureobasidium pullulans* as a source of FTase, but it is well known that each cell type requires a unique combination of the medium components (carbon and nitrogen source, growth factors, metal ions, etc.) for the expression of a particular phenotype. The requirement of *Aureobasidium* strain for production of FOS or pullulan will be different from requirement of the *Aspergillus* strains for FOS production. Hence, the fact the jaggery works well in *Aureobasidium* fermentation for pullulan production does not in any way render obvious the use of jaggery in *Aspergillus* fermentation for FOS production.

Claims 1 and 10-14 were rejected under 35 U.S.C. 103(a) over Sangeetha et al. and Brouwers (US 2002/0065245).

Brouwers illustrates the use of stevia extract as a suitable additive to Glucooligosaccharide (GOS), however, it remains silent on the use of the same as an additive to FOS preparation. Interactions between components/ingredients forming a composition is an area of concern. GOS and FOS are composed of monomer units that are distinct from one another and a non-interaction between GOS-stevia does not render obvious a non-interaction between FOS-stevia. Moreover, GOS and FOS are obtained by the action of different set of enzymes, that is GTase and FTase respectively. These enzymes are different since they accept different molecules as substrates and hence result in distinct end products. Otherwise use of two different enzymes to catalyse two different reactions would have been unnecessary. Thus, implying that FOS and GOS are distinct from one another.

Claims 21-25 were rejected over Sangeetha et al., Schlyter et al. (US 2004/0043043) and Wong (US 2004/0208981). Claims 21-25 have been cancelled rendering their rejection moot.

Claims 26 and 27 were rejected over Sangeetha et al. and Jonniaux et al. (US 6,518,047).

Jonniaux et al. describe inulinase production from *Penicillium restrictum* A191, wherein the gene is cloned and expressed in *Aspergillus oryzae*. Thus, the *Aspergillus* strain acts only as a suitable recombinant host. The present application uses *Aspergillus oryzae* strain that inherently expresses FTase.

Further, the method of recycle/immobilization, described by Jonniaux, is distinct from the recycle method described in the present application. Jonniaux et al. use the entire biomass once produced or the cell extracts obtained from the biomass for immobilization on a solid support so that it may be reused in the enzymatic reaction. It has nothing to do with the production stage of the biomass. The present invention describes reusability at the level of production phase and not at the reaction phase. Therefore, it does not use any form of solid support. Part of the biomass produced in the first cycle is used as an inoculum for the second cycle. This does not necessitate inoculum generation separately for each batch. In effect, the immobilization method, described in the present invention, mimics continuous fermentation in certain ways.

In view of the above, it is respectfully submitted that Claims 1-8, 10-19 and 26-27 are neither anticipated by nor obvious over Sangeetha et al. Vijayendra et al., Brouwers, Schlyter et al., Wong, and Jonniaux et al., alone or in any combination thereof. The rejections thereof over these references are therefore respectfully requested to be withdrawn.

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Amdt. dated December 18, 2007  
Reply to Office Action of July 18, 2007

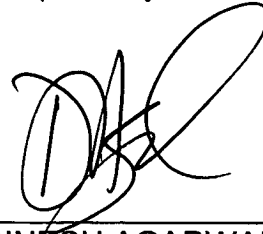
### **CONCLUSION**

For the foregoing reasons, it is respectfully submitted that Claims 1-8, 10-19 and 26-27 are in condition for allowance. Withdrawal of all the objections and rejections and allowance of these claims is respectfully solicited.

It is believed that no additional fee is due for this submission. Should that determination be incorrect, however, the Commissioner is hereby authorized to charge any deficiencies, or credit any overpayment, to our Deposit Account No. 01-0433, and notify the undersigned in due course.

Should the Examiner have any questions or wish to discuss further this matter, please contact the undersigned at the telephone number provided below.

Respectfully submitted,



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